APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/539,366	06/15/2005	Benno Tieke	NL 021391	4275

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EXAMINER
PATANKAR, ANEETA V

ART UNIT	PAPER NUMBER
4134	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
	10/539,366	TIEKE ET AL.
Office Action Summary	Examiner	Art Unit	
	ANEETA PATANKAR	4134	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>*15 June 2005*</u>.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>*1-10*</u> is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) <u>*1-10*</u> is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on <u>*15 June 2005*</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☒ All   b)☐ Some *   c)☐ None of:
      1.☒ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date <u>*8/3/2007 and 6/15/2005*</u>.

4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2.   **Claims 1-7, 9 and 10** are rejected under 35 U.S.C. 103(a) as being unpatentable

over U.S. Patent No. 5,732,062 to *Yokoi et al.* in view of Non-Patent Literature *Ultra-*

Speed Compact Disc Rewritable specification (Recordable Compact Disc Systems, Part

III: CD-RW, Volume 3: Ultra-Speed, Version 1.0) to *Sony/Philips.*

As to **claim 1**, *Yokoi* discloses the method of recording marks in an

information layer of a record carrier by irradiating the information layer by a

pulsed radiation beam, said information layer having a phase reversibly

changeable between a crystal phase and an amorphous phase (Fig. 32, column

34, lines 8-21).

Yokoi is deficient to disclosing the method of recording marks wherein an

even mark having a time length of nT, where n is representing an integer value

equal to 4, 6, 8, or 10 and T is representing the length of one period of a

reference clock, is written by a sequence of n/2 pulses, and wherein an odd mark

having a time length of nT, where n is representing an integer value equal to 5, 7,

9 or ii, is written by as sequence of (n-1)/2 pulses, a last pulse in the sequence of

pulses for writing an odd mark being a period Δ1p longer than a last pulse in the

sequence of pulses for writing an even mark, a gap preceding the last pulse in

the sequence of pulses for writing an odd mark being a period $\Delta 1g$ longer than a

gap preceding the last pulse in the sequence of pulses for writing an even mark,

a cooling gap succeeding the last pulse in the sequence of pulses for writing an

odd mark being a period $\Delta 2$ longer than a cooling gap succeeding the last pulse

in the sequence of pulses for writing an even mark, the sum of the periods $\Delta 1p$,

$\Delta 1g$, and $\Delta 2$ being within a range from 0.7T to 1.IT.

However, *Sony/Philips* discloses the method of recording marks wherein

an even mark having a time length of nT, where n is representing an integer

value equal to 4, 6, 8, or 10 and T is representing the length of one period of a

reference clock, is written by a sequence of n/2 pulses (11-3, 11.1.3.2), and

wherein an odd mark having a time length of nT, where n is representing an

integer value equal to 5, 7, 9 or ii, is written by as sequence of (n-1)/2 pulses (11-

3, 11.1.3.2), a last pulse in the sequence of pulses for writing an odd mark being

a period $\Delta 1p$ longer than a last pulse in the sequence of pulses for writing an

even mark (11-3, 11.1.3.2), a gap preceding the last pulse in the sequence of

pulses for writing an odd mark being a period $\Delta 1g$ longer than a gap preceding

the last pulse in the sequence of pulses for writing an even mark, a cooling gap

succeeding the last pulse in the sequence of pulses for writing an odd mark

being a period $\Delta 2$ longer than a cooling gap succeeding the last pulse in the

sequence of pulses for writing an even mark (11-3, 11.1.3.2), the sum of the

periods $\Delta 1p$, $\Delta 1g$, and $\Delta 2$ being within a range from 0.7T to 1.IT (11-5, table 11-1).

Yokoi and Sony/Philips are analogous art because they are from the same field of endeavor with respect to recording onto optical mediums.

At the time of invention, it would have been obvious to a person of ordinary skilled in the art to create at method of recording marks on an information layer by irradiating the information layer by a pulsed radiation beam and creating even marks having a time length of nT where n is an integer value of 4, 6, 8 or 10 and T is the period of a reference clock. The suggestion/motivation would have been to have a cooling gap between pulses as taught by Sony/Philips (11-3, 11.1.3.2).

As to **claim 2**, Yokoi discloses a method wherein the sum of the periods $\Delta 1p$ and $\Delta 1g$ is within a range from 0.25T to 0.75T (Fig. 22 and 23, columns 26-27, lines 65-21).

As to **claim 3**, Yokoi discloses a method wherein the period $\Delta 1p$ is substantially equal to the period $\Delta 1g$ (Fig. 24-25, column 27, lines 22-55).

As to **claim 4**, Yokoi discloses a method wherein a mark having a time length of 3T is written by a single pulse being a period $\Delta 3$ longer than the last pulse in the sequence of pulses for writing an even mark (Fig. 1, columns 24-25, lines 60-17), and a subsequent cooling gap being a period $\Delta 4$ longer than the cooling gap succeeding the last pulse in the sequence of pulses for writing an even mark (Fig. 20, columns 24-25, lines 60-17).

Yokoi is deficient to disclosing a method wherein the sum of the periods

A3 and A4 is within a range from 0.7T to 1.IT.

However, Sony/Philips discloses a method wherein the sum of the periods

A3 and A4 is within a range from 0.7T to 1.IT (11-5, Table 11-1). In addition, the

same motivation is used as the rejection for claim 1.

As to **claim 5**, Yokoi is deficient to disclosing a method, wherein the

duration of the last pulse in the sequence of pulses for writing an even mark (Tp)

is substantially equal to 7.2 ns; the period $\Delta 1p$ has a duration substantially equal

to 2/8T; the period $\Delta 1g$ has a duration substantially equal to 2/8T; the duration of

the cooling gap succeeding the last pulse in the sequence of pulses for writing an

even mark (Tc) is substantially equal to 5/8T; the period $\Delta 2$ has a duration

substantially equal to 3/8T; the period $\Delta 3$ has a duration substantially equal to

7/8T - 7.2 ns; and the period $\Delta 4$ has a duration substantially equal to 5/8T.

However, Sony/Philips discloses a method, wherein the duration of the

last pulse in the sequence of pulses for writing an even mark (Tp) is substantially

equal to 7.2 ns (11-5, Table 11-1); the period $\Delta 1p$ has a duration substantially

equal to 2/8T (11-5, Table 11-1); the period $\Delta 1g$ has a duration substantially

equal to 2/8T (11-5, Table 11-1); the duration of the cooling gap succeeding the

last pulse in the sequence of pulses for writing an even mark (Tc) is substantially

equal to 5/8T (11-5, Table 11-1); the period $\Delta 2$ has a duration substantially equal

to 3/8T; the period $\Delta 3$ has a duration substantially equal to 7/8T - 7.2 ns (11-5,

Table 11-1); and the period $\Delta4$ has a duration substantially equal to 5/8T (11-5, Table 11-1). In addition, the same motivation is used as the rejection for claim 1.

As to **claim 6**, *Yokoi* discloses a method wherein the start of the single pulse for writing a mark having a time length of 3T relative to the start of a period of the reference clock corresponds to the start of the first pulse in the sequence of pulses for writing an even mark relative to the start of a period of the reference clock (Fig. 1, columns 24-25, lines 60-17).

As to **claim 7**, *Yokoi* discloses A recording device for recording marks in an information layer of a record carrier by irradiating the information layer by means of a pulsed radiation beam, each mark being written by a sequence of one or more pulses, said information layer having a phase reversibly changeable between a crystal phase and an amorphous phase (Fig. 32, columns 34, lines 8-21), the device comprising a radiation source for providing the radiation beam, and a control unit operative for controlling the power of the radiation beam and for providing the sequences of pulses for recording the marks (Fig. 30A-C, column 24, lines 18-51).

Yokoi is deficient to disclosing a recording device such that there is an even mark having a time length of nT, where n is representing an integer value equal to 4, 6, 8, or 10 and T is representing the length of one period of a reference clock, is recorded by a sequence of n/2 pulses and an odd mark having a time length of nT, where n is representing an integer value equal to 5, 7, 9 or 11, is written by as sequence of (n-1)/2 pulses, a last pulse in the sequence

of pulses for writing an odd mark being a period Δ1p longer than a last pulse in

the sequence of pulses for writing an even mark, a gap preceding the last pulse

in the sequence of pulses for writing an odd mark being a period Δ1g longer than

a gap preceding the last pulse in the sequence of pulses for writing an even

mark, a cooling gap succeeding the last pulse in the sequence of pulses for

writing an odd mark being a period Δ2 longer than a cooling gap succeeding the

last pulse in the sequence of pulses for writing an even mark, and the sum of the

periods Δ1p, Δ1g, and Δ2 being within a range from 0.7T to 1.IT.

However, *Sony/Philips* discloses a recording device such that there is an

even mark having a time length of nT, where n is representing an integer value

equal to 4, 6, 8, or 10 and T is representing the length of one period of a

reference clock (11-3, 11.1.3.2), is recorded by a sequence of n/2 pulses and an

odd mark having a time length of nT, where n is representing an integer value

equal to 5, 7, 9 or 11, is written by as sequence of (n-1)/2 pulses (11-3, 11.1.3.2),

a last pulse in the sequence of pulses for writing an odd mark being a period Δ1p

longer than a last pulse in the sequence of pulses for writing an even mark, a gap

preceding the last pulse in the sequence of pulses for writing an odd mark being

a period Δ1g longer than a gap preceding the last pulse in the sequence of

pulses for writing an even mark (11-3, 11.1.3.2), a cooling gap succeeding the

last pulse in the sequence of pulses for writing an odd mark being a period Δ2

longer than a cooling gap succeeding the last pulse in the sequence of pulses for

writing an even mark, and the sum of the periods Δ1p, Δ1g, and Δ2 being within a

range from 0.7T to 1.IT (11-3, 11.1.3.2). In addition, the same motivation is used

as for rejection 1.

As to **claim 9**, *Yokoi* is deficient to disclosing a recording device wherein

the sum of the periods $\Delta 1p$ and $\Delta 1g$ is within a range from 0.25T to 0.75T.

However, *Sony/Philips* discloses a recording device wherein the sum of

the periods $\Delta 1p$ and $\Delta 1g$ is within a range from 0.25T to 0.75T (11-5, Table 11-

1). In addition, the same motivation is used as the rejection for claim 1.

As to **claim 10**, *Yokoi* is deficient to disclosing a recording device wherein

the control unit is further operative for providing a sequence of pulses for

recording a mark having a time length of 3T, said sequence of pulses for

recording a mark having a time length of 3T comprising a single pulse being a

period A3 longer than the last pulse in the sequence of pulses for writing an even

mark, and a subsequent cooling gap being a period A4 longer than the cooling

gap succeeding the last pulse in the sequence of pulses for writing an even

mark, the sum of the periods A3 and A4 being within a range from 0.7T to 1.IT.

However, *Sony/Philips* discloses a recording device wherein the control

unit is further operative for providing a sequence of pulses for recording a mark

having a time length of 3T (11-3, 11.1.3.2), said sequence of pulses for recording

a mark having a time length of 3T comprising a single pulse being a period A3

longer than the last pulse in the sequence of pulses for writing an even mark (11-

3, 11.1.3.2), and a subsequent cooling gap being a period A4 longer than the

cooling gap succeeding the last pulse in the sequence of pulses for writing an

even mark, the sum of the periods A3 and A4 being within a range from 0.7T to

1.IT (11-5, Table 11-1). In addition, the same motivation is used as the rejection

for claim 1.

3.   **Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S.

Patent No. 5,732,062 to *Yokoi et al.* in view of Non-Patent Literature *Ultra-Speed*

Compact Disc Rewritable specification (Recordable Compact Disc Systems, Part III:

CD-RW, Volume 3: Ultra-Speed, Version 1.0). in further view of U.S. Patent No.

6,515,949 B2 to *Masaki et al.*

As to **claim 8**, *Yokoi* discloses a recording device for recording marks in

an information layer of a record carrier by irradiating the information layer by

means of a pulsed radiation beam, each mark being written by a sequence of

one or more pulses, said information layer having a phase reversibly changeable

between a crystal phase and an amorphous phase (Fig. 32, column 34, lines 8-

21), the device comprising a radiation source for providing the radiation beam, a

control unit operative for controlling the power of the radiation beam and for

providing the sequences of pulses for recording the marks, the pattern of pulses

and gaps between the pulses in a sequence of pulses based on a set of write

parameters ($\Delta I, \Delta 2, \Delta 3, \Delta 4$) provided to the control unit (Fig. 30A-C, column 24,

lines 18-51).

Yokoi is deficient to disclosing a recording device an identification unit

operative for identifying the record carrier, and a selection unit operative for

selecting a set of write parameters from a collection of sets of write parameters

based on the identification of the record carrier and for providing the control unit

with the selected set of write parameters, the selection unit further operative for

providing the control unit with a default set of write parameters when the

identification unit is incapable of identifying the record carrier and/or the selection

unit is incapable of selecting a set of write parameters from the collection of sets

of write parameters based on the identification of the record carrier, said default

set of write parameters being such that an even mark having a time length of nT,

where n is representing an integer value equal to 4, 6, 8, or 10 and T is

representing the length of one period of a reference clock, is recorded by a

sequence of n/2 pulses and an odd mark having a time length of nT, where n is

representing an integer value equal to 5, 7, 9 or 11, is written by as sequence of

(n-1)/2 pulses, a last pulse in the sequence of pulses for writing an odd mark

being a period Alp longer than a last pulse in the sequence of pulses for writing

an even mark, a gap preceding the last pulse in the sequence of pulses for

writing an odd mark being a period $\Delta 1g$ longer than a gap preceding the last

pulse in the sequence of pulses for writing an even mark, a cooling gap

succeeding the last pulse in the sequence of pulses for writing an odd mark

being a period $\Delta 2$ longer than a cooling gap succeeding the last pulse in the

sequence of pulses for writing an even mark, and the sum of the periods $\Delta 1p$,

$\Delta 1g$, and $\Delta 2$ being within a range from 0.7T to 1.1T.

However, *Masaki* discloses an identification unit operative for identifying

the record carrier, and a selection unit operative for selecting a set of write

parameters from a collection of sets of write parameters based on the

identification of the record carrier and for providing the control unit with the

selected set of write parameters, the selection unit further operative for providing

the control unit with a default set of write parameters when the identification unit

is incapable of identifying the record carrier and/or the selection unit is incapable

of selecting a set of write parameters from the collection of sets of write

parameters based on the identification of the record carrier (Columns 11-12, lines

62-23).

However, *Sony/Philips* discloses a recording device with a default set of

write parameters being such that an even mark having a time length of nT, where

n is representing an integer value equal to 4, 6, 8, or 10 and T is representing the

length of one period of a reference clock, is recorded by a sequence of n/2

pulses and an odd mark having a time length of nT, where n is representing an

integer value equal to 5, 7, 9 or 11, is written by as sequence of (n-1)/2 pulses

(11-3, 11.1.3.2), a last pulse in the sequence of pulses for writing an odd mark

being a period Alp longer than a last pulse in the sequence of pulses for writing

an even mark (11-3,11.1.3.2), a gap preceding the last pulse in the sequence of

pulses for writing an odd mark being a period $\Delta 1g$ longer than a gap preceding

the last pulse in the sequence of pulses for writing an even mark (11-3, 11.1.3.2),

a cooling gap succeeding the last pulse in the sequence of pulses for writing an

odd mark being a period $\Delta 2$ longer than a cooling gap succeeding the last pulse

in the sequence of pulses for writing an even mark, and the sum of the periods

$\Delta 1p$, $\Delta 1g$, and $\Delta 2$ being within a range from 0.7T to 1.1T (11-5, Table 11-1).

Yokoi, *Masaki* and *Sony/Philips* are analogous art because they are from

the same field of endeavor with respect to optical mediums.

At the time of invention, it would have been obvious to a person of

ordinary skilled in the art to create a method of recording marks in an information

layer by irradiating the information layer by a pulse radiation beam and an

identifying unit for identifying the record carrier. The suggestion/motivation would

have been in order to determine track areas on the optical medium as taught by

Masaki (Columns 11-12, lines 62-23).

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to ANEETA PATANKAR whose telephone number is

(571)272-9773. The examiner can normally be reached on Monday-Friday 7:30am-

5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, LunYi Lao can be reached on (571)272-7671. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

                                                        Aneeta V. Patankar
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